digital cinema

current constraints
in
acquisition and projection

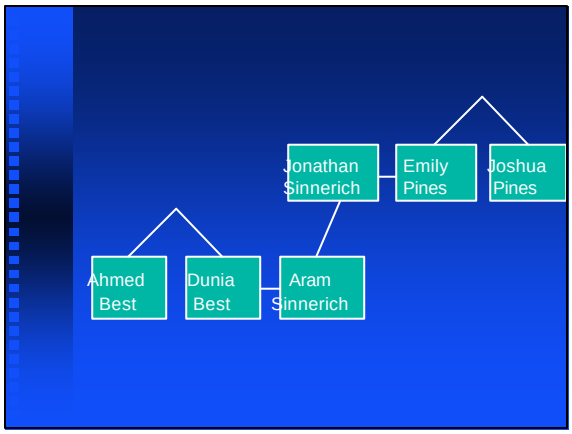
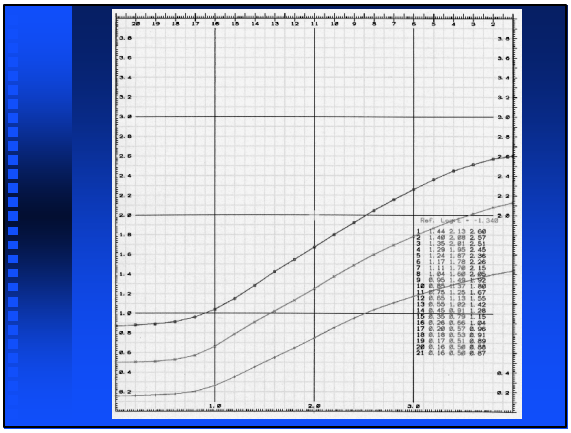
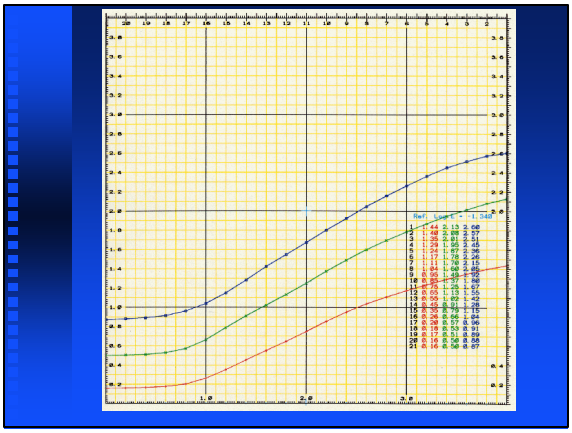
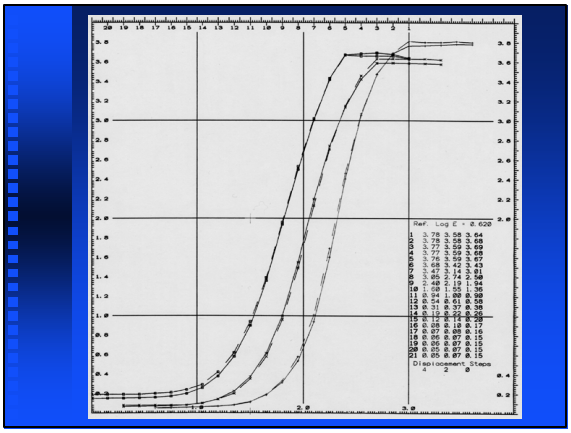
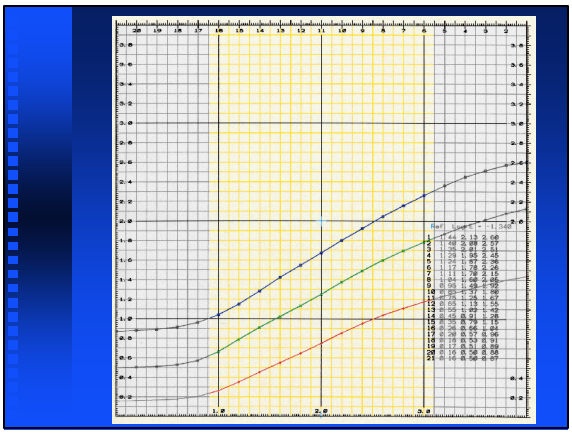


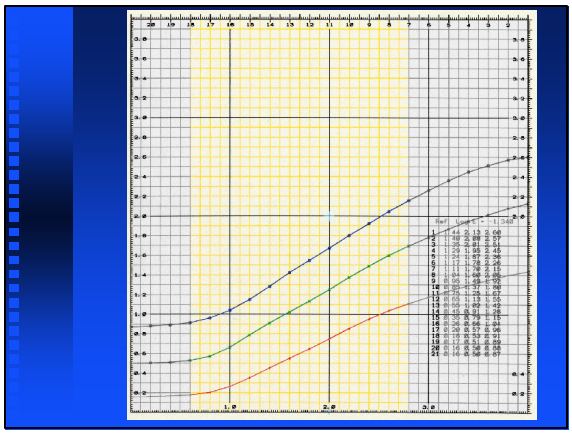
image acqusition

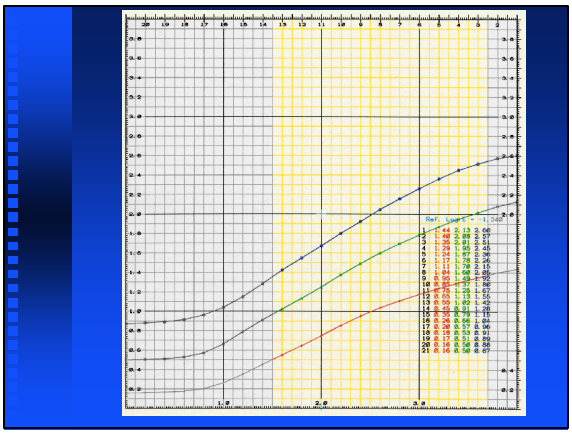


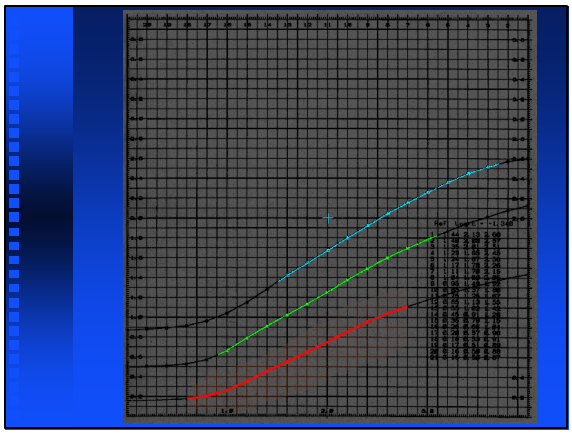


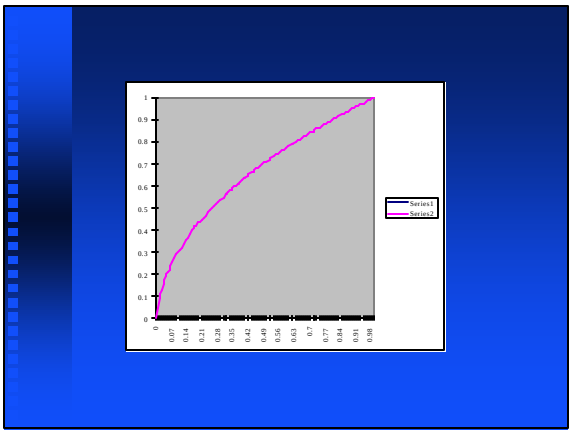


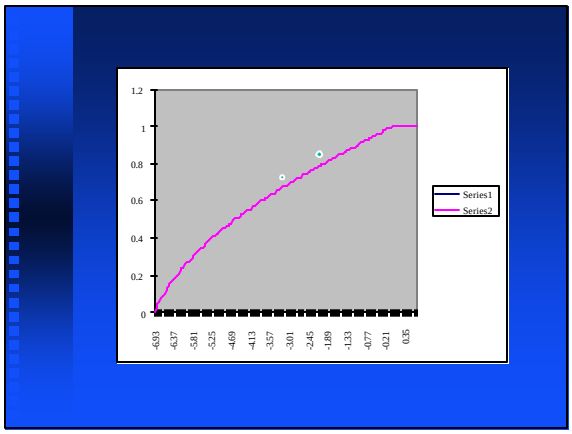


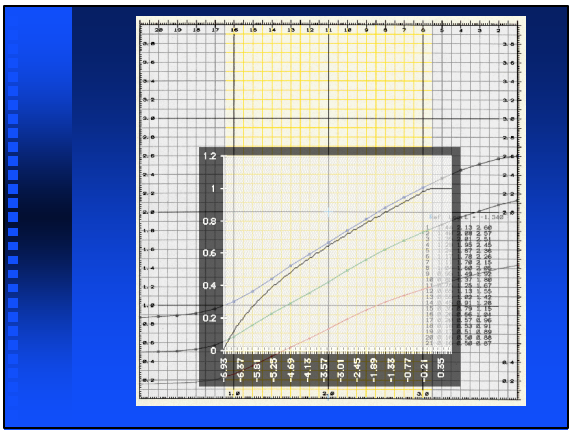


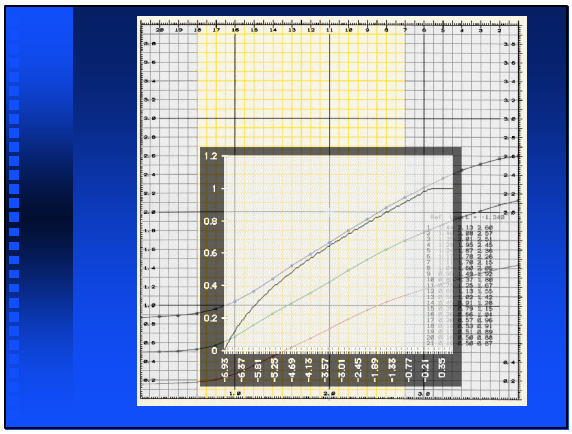


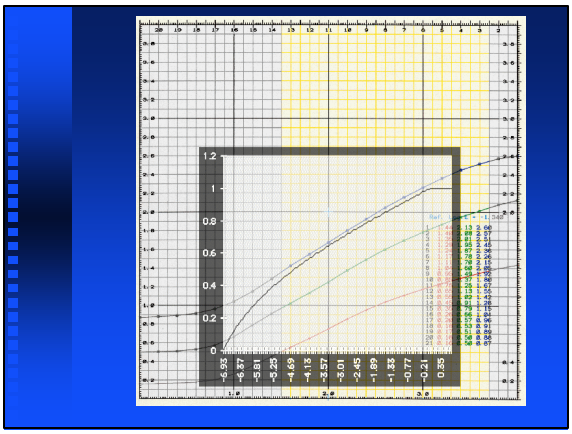


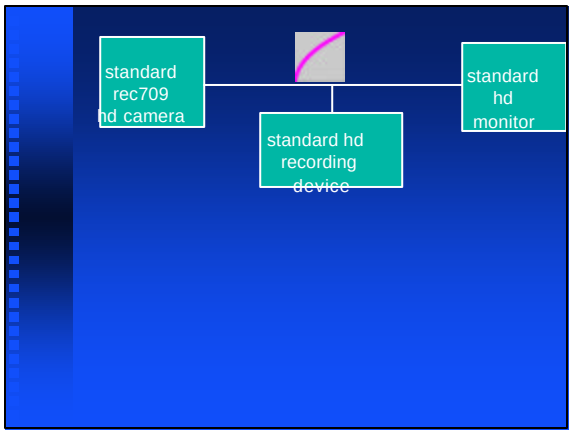

Series1
Series2

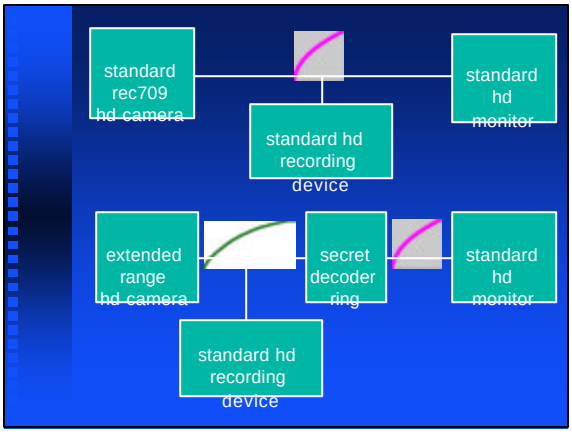

Series1
Series2








standard rec709 hd camera
standard hd recording device
standard hd monitor


standard rec709 hd camera
standard hd recording device
standard hd monitor
extended range hd camera
secret decoder ring
standard hd monitor
standard hd recording device

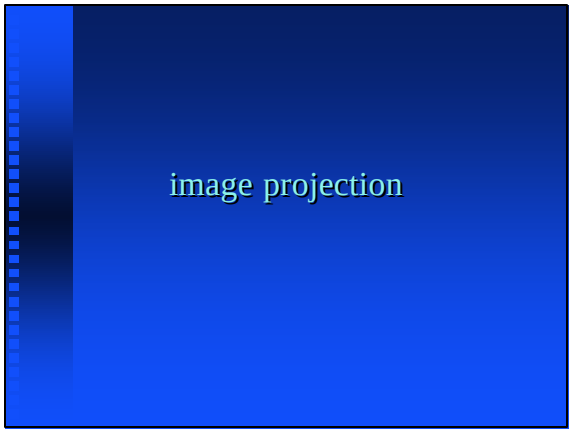


image projection

zillions of bits of hard disk storage (containing compressed image data)

decompressor

digital projector

zillions of bits of hard disk storage (containing compressed image data)

decompressor

digital projector

conformed final movie

final film colour correction

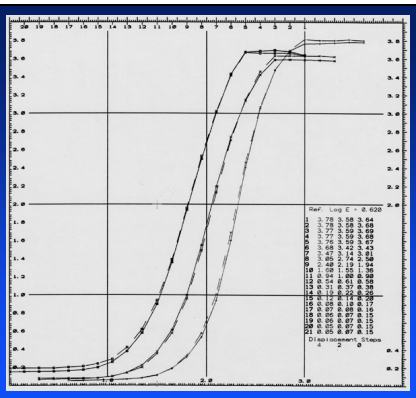
film release prints

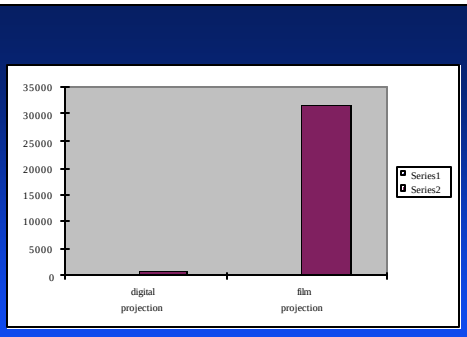
film projection

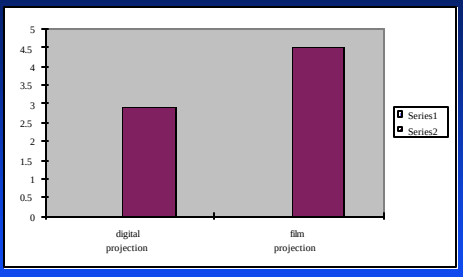
final digital colour correction

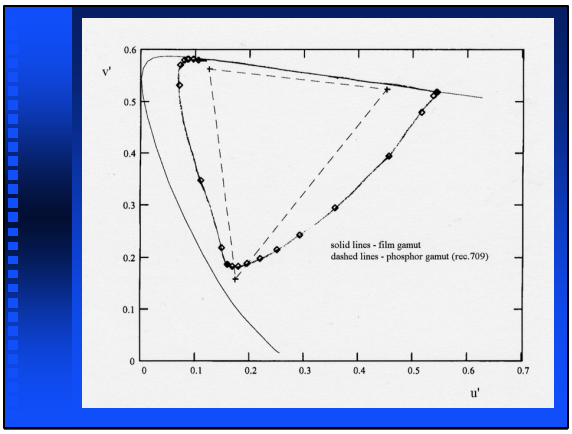
digital release media

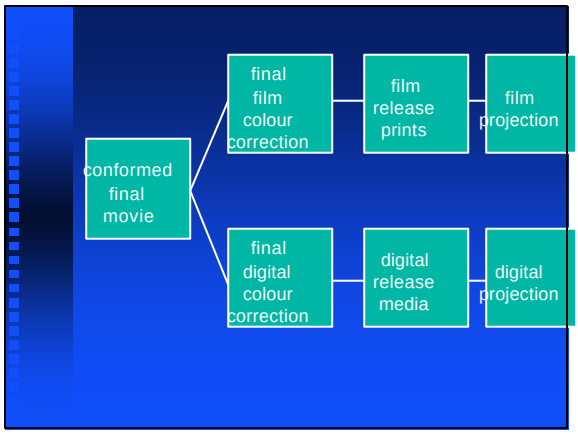
digital projection

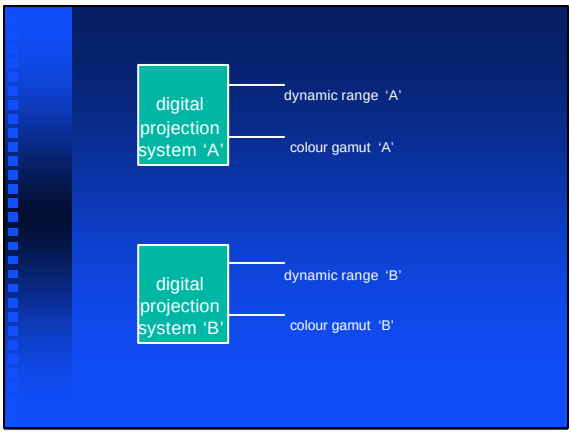


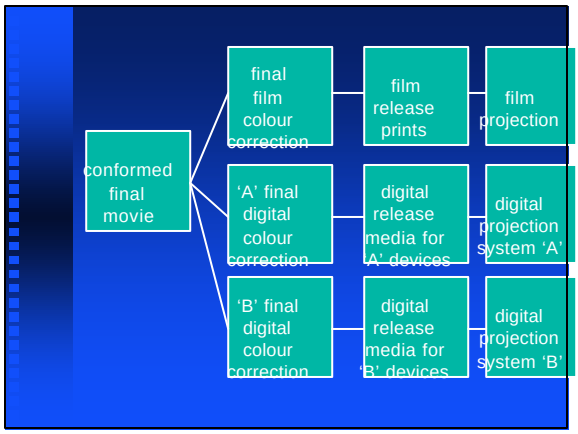


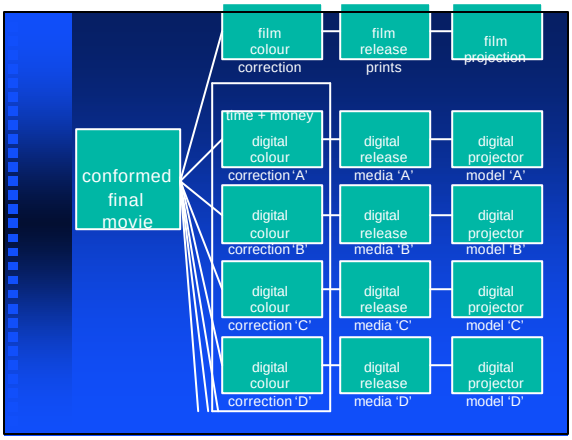


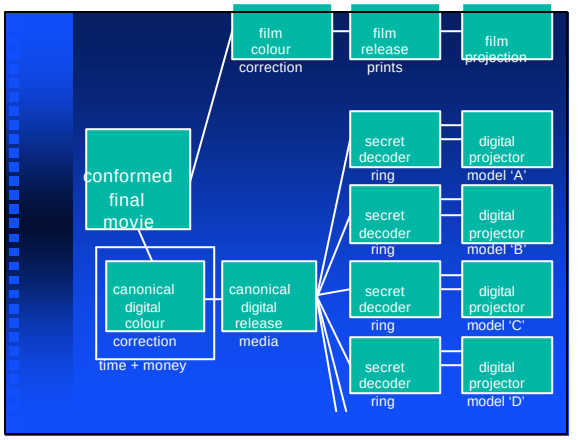

v'
u'
solid lines - film gamut
dashed lines - phosphor gamut (rec.709)


conformed final movie
final film colour correction
film release prints
film projection
final digital colour correction
digital release media
digital projection


digital projection system 'A'
dynamic range 'A'
colour gamut 'A'
digital projection system 'B'
dynamic range 'B'
colour gamut 'B'


conformed final movie
final film colour correction
film release prints
film projection
'A' final digital colour correction
digital release media for 'A' devices
digital projection system 'A'
'B' final digital colour correction
digital release media for 'B' devices
digital projection system 'B'


conformed final movie
film colour correction
film release prints
film projection
time + money
digital colour correction 'A'
digital release media 'A'
digital projector model 'A'
digital colour correction 'B'
digital release media 'B'
digital projector model 'B'
digital colour correction 'C'
digital release media 'C'
digital projector model 'C'
digital colour correction 'D'
digital release media 'D'
digital projector model 'D'


conformed final movie
film colour correction
film release prints
film projection
canonical digital colour correction
time + money
canonical digital release media
secret decoder ring
digital projector model 'A'
digital projector model 'B'
digital projector model 'C'
digital projector model 'D'

conclusions - wish list

image acquisition

capture and encode greater dynamic range on the set

without having to retool existing rec 709 compliant recording equipment and other devices

add black box at display time for viewing images on standard monitors during production and post production

image projection

continue to improve dynamic range and colour gamut of digital projection devices

agree on “upward compatible” metric for image representation and distribution

provide device dependent calibration data for black box convertion from this standard distribution metric at showtime